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P. INT COOPERATION TREA

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

Date of mailing (day/month/year) 11 April 2001 (11.04.01)	
International application No. PCT/GB00/03115	Applicant's or agent's file reference FEMI/P23178PC
International filing date (day/month/year) 11 August 2000 (11.08.00)	Priority date (day/month/year) 14 August 1999 (14.08.99)
Applicant SADLER, Kenneth, George et al	

1. The designated Office is hereby notified of its election made:

☒

in the demand filed with the International Preliminary Examining Authority on:

13 March 2001 (13.03.01)

☐

in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was☐

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Pascal Piriou Telephone No.: (41-22) 338.83.38
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PCT


REC'D 16 NOV 2001

WIPO

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FEMI/P23178PC		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/03115	International filing date (day/month/year) 11/08/2000	Priority date (day/month/year) 14/08/1999	
International Patent Classification (IPC) or national classification and IPC A61B17/128			
Applicant FEMCARE(CYPRUS) LIMITED			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 9 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 8 sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input checked="" type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application 			
Date of submission of the demand 13/03/2001		Date of completion of this report 15.11.2001	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized officer Barton, S Telephone No. +31 70 340 2717	



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB00/03115

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):
Description, pages:

4-16	as originally filed		
2,3,3a	filed with the demand		
1,1a	as received on	30/07/2001	with letter of 27/07/2001

Claims, No.:

1-10	as received on	30/07/2001	with letter of 27/07/2001
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Drawings, sheets:

1/7-7/7	as originally filed
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2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB00/03115

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)
see separate sheet

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
- ☒ claims Nos. 1-10.

because:

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
- ☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 11,12 (as originally filed) are so unclear that no meaningful opinion could be formed (*specify*):
see separate sheet
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☒ no international search report has been established for the said claims Nos. 1-10.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

- ☐ the written form has not been furnished or does not comply with the standard.
- ☐ the computer readable form has not been furnished or does not comply with the standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB00/03115

citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	10
	No:	Claims	1-9 (as originally filed, and as searched)
Inventive step (IS)	Yes:	Claims	none
	No:	Claims	1-10 (as originally filed, and as searched)
Industrial applicability (IA)	Yes:	Claims	1-10
	No:	Claims	

**2. Citations and explanations
see separate sheet**

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/03115

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

- 1 Due to the introduction of unsearched subject matter, not present in the claims as searched, into independent claims 1,7, the claims at present on file relate to unsearched subject matter and as a result no establishment of opinion with regard to novelty, inventive step and industrial applicability of these claims is possible. See however also Paras VIII.2.
- 2 However, under Item V such opinion is established with reference to claims 1-10 as originally filed and as searched.
- 2.1 Since claims 11,12 as originally filed and as searched, contrary to Rule 6.3(a), do not define their subject matter in terms of technical features, but rather by reference to figures (see also Rule 6.2 (a) PCT) no meaningful opinion as to the novelty, inventive step and industrial applicability of these claims can be made.
- 3 Amended claims 1,7 add to the text of claims 1,7 as originally filed and as searched the stipulation that the direction of the compressed (compressive?) force should be perpendicular to the direction of sliding. Such subject matter lacks support in the original application documents. As a result the amendments filed with the International Bureau under Article 19(1) introduce subject matter which extends beyond the content of the application as filed, contrary to Article 19(2) PCT.

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1 Reference is made to the following documents:
 - D1: EP-A-820725
 - D2: EP-A-916309
 - D3: DE-A-4015562
 - D4: WO-A-9108708

2 Lack of novelty of claims 1-9

- 2.1 D1 discloses, see in particular fig.1,5,6, an applicator for surgical clips, said applicator comprising elongate tube means, said elongate tube means including means for attachment to an operating handle (comprising items 12,14), said elongate tube means comprising an inner member 28 and an outer member 26, said inner and outer members being slidable relative to each other, said inner member and said outer member being shaped to retain at least one surgical clip 32, said handle being operative to slide said inner member relative to said outer member, said inner and outer members having cooperative surfaces 29b,34 to cause said surgical clip to be forced from an open to a closed position on operation of said handle to slide said inner and outer members relative to each other, as a result of which claim 1 lacks novelty over the disclosure of D1 in the meaning of Art 33 (1),(2) PCT.
- 2.2 As the device of D1 also has the features of claims 2,3, these claims also lack novelty over the disclosure of D1 in the meaning of Art 33 (1),(2) PCT.
- 2.3 D2 discloses, see in particular fig.5f,8; para.[0027] an applicator for surgical clips, said applicator comprising elongate tube means, said elongate tube means including means for attachment to an operating handle, said elongate tube means comprising an inner member ("stab" 802, which can be hollow as in fig.5f) and an outer member 801, said inner and outer members being slidable relative to each other, said inner member and said outer member being shaped to retain one surgical clip 809, said handle being operative to slide said inner member relative to said outer member, said inner and outer members having cooperative surfaces to cause said surgical clip to be forced from an open to a closed position on operation of said handle to slide said inner and outer members relative to each other, as a result of which claim 1 lacks novelty over the disclosure of D2 in the meaning of Art 33 (1),(2) PCT.
- 2.4 As the device of D2 also has the features of claims 2,3, (note that the angle may be between 30 and 90 degrees) these claims also lack novelty over the disclosure of D1 in the meaning of Art 33 (1),(2) PCT.

- 2.5 D3 discloses, see in particular fig.1,4, an applicator for surgical clips, said applicator comprising elongate tube means, said elongate tube means including means for attachment to an operating handle, said elongate tube means comprising an inner member 3 and an outer member 11, said inner and outer members being slidable relative to each other, said inner member and said outer member being shaped to retain at least one surgical clip 29,30, said handle being operative to slide said inner member relative to said outer member, said inner and outer members having cooperative surfaces 26,27;28 to cause (one at a time) said surgical clip to be forced from an open to a closed position on operation of said handle to slide said inner and outer members relative to each other, as a result of which claim 1 lacks novelty over the disclosure of D3 in the meaning of Art 33 (1),(2) PCT.
- 2.6 As the device of D3 also has the features of claims 4,5, these claims also lack novelty over the disclosure of D3 in the meaning of Art 33 (1),(2) PCT.
- 2.7 D4 discloses, see in particular fig.21-24;pp26-31, an applicator for surgical "suture ties", which considering their form and function could equally be described as "clips", said applicator comprising elongate tube means, said elongate tube means including means for attachment to an operating handle, said elongate tube means comprising an inner member 174 and an outer member 206, said inner and outer members being slidable relative to each other, said inner member and said outer member being shaped to retain at least one surgical clip 48, said handle being operative to slide said inner member relative to said outer member, said inner and outer members having cooperative surfaces to cause said surgical clip to be forced from an open to a closed position on operation of said handle to slide said inner and outer members relative to each other, as a result of which claim 1 lacks novelty over the device of D4 in the meaning of Art 33(1),(2) PCT.
- 2.8 As the device of D4 also has the features of claims 2,4-6, these claims also lack novelty over the disclosure of D3 in the meaning of Art 33 (1),(2) PCT.
- 2.9 Since the devices of D3,D4 further have a plurality of clips stored therein in a single column array within the inner tube, the subject matter of claim 7 also lacks novelty over the disclosure of D3 and D4 in the meaning of Art 33 (1),(2) PCT.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/03115

2.10 Since the devices of D4 further have a spring as in claim 8 and a distal stop as in claim 9, the subject matter of these claims also lacks novelty over the disclosure of D4 in the meaning of Art 33 (1),(2) PCT.

3 Lack of inventive step of claim 10

3.1 No inventive step is apparent in providing a ratchet arrangement on a clip applying device such as that of D4 in order to prevent unwanted proximal movement of the clip column, as an equivalent ratchet system is taught for the same purpose in a similar clip applier in D3.

3.2 Considering the disclosures of D1-D2, and also of the other prior art mentioned in the International Search Report, it is not apparent that recombining the various features of the claims can lead to inventive subject matter.

Re Item VII

Certain defects in the international application

- 1 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
- 2 The independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT.

Re Item VIII

Certain observations on the international application

- 1 The large number of widely differing devices of the prior art which fall within the scope of claim 1 is in part due to the vague and imprecise definition of the subject matter of the claim. However, even were claim 1 to be amended to a form apparently intended and taking into account the description as a whole as in the following paragraph, the novelty objection of para V.2.7-10 remains valid.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/03115

- 1.1 An applicator for the sequential application of a plurality of (note the last line of claim 4) surgical clips, said applicator comprising elongate tube means, said elongate tube means including means for attachment to an operating handle, said elongate tube means comprising an inner **tubular** member and an outer **tubular** member, said inner and outer members being **axially** slidable relative to each other, said inner member and said outer member being shaped to retain at least one surgical clip **therebetween** (unlike as in eg D3), said handle being operable to slide said inner member **axially** relative to said outer member, said inner and outer members having cooperative surfaces to cause said surgical clip to be forced from an open to a closed position on operation of said handle to slide said inner and outer members relative to each other.
- 1.2 Note that the word "preferably" in claim 6 means that claim 6 does not add any certain technical features to the subject matter of claim 5. This word has been ignored in the analysis of Section V.
- 1.3 It is not clear how the ledge shaped stop means of claim 9 can provide leverage. This feature has been ignored in the analysis of Section V.
- 2 Amended claims 1,7 add to the text of claims 1,7 as searched and as discussed above the stipulation that the clip, (not itself part of the applicator of claim 1) should have upper and lower jaw members and locking means. Such subject matter does not affect the above arguments as to novelty of claims 1-6.
 - 2.1 Amended claims 1,7 further add to the text of claims 1,7 as searched and as discussed above the stipulation that the sliding motion should create a compressed (compressive?) force sufficient to compress and lock the upper and lower jaws. Such subject matter does not affect the above arguments as to novelty of claims 1-10, since a force suitable to close such a clip is not distinguishable from a force suitable to close a plastic-deformable clip as in D1,D2.
 - 2.2 The attention of the Applicant is drawn to figures 65-69 of D4.

PAT 34 AMDT

3.0. 07. 2001

APPLICATOR FOR SURGICAL CLIPS

(90)

01
The present application relates to applicators for surgical clips and more particularly to applicators for ligation clips.

5

02
Certain known applicators for clips use a push rod and associated link mechanism to cause rotation of an articulated jaw to produce compression forces on a clip and to thereby compress the clip causing it to close preferably with a latching action. The compression forces on the
10 relatively slender central rod produce the risk of buckling with consequent lost motion. In addition, the mechanical force from the link causes radial reaction forces and consequent friction at the interface between the push rod and the outer tube.

15 For known applicators, this creates a requirement that the applicator must be made from high grade components which will withstand such forces and be able to perform many clip closure operations.

Additionally such designs with rotational closure forces usually require a
20 clip to be inserted into the jaws of the applicator prior to clip closure. Thus, the applicator can only apply one clip at a time.

<1a>

It is an object of the present invention to provide an applicator for surgical clips which is of a simpler, more robust design to such known applicators.
25

It is a further object of the preferred embodiment of the present invention to provide an applicator which can store and be used to apply a multiplicity of clips.

30 Such an applicator may be partially or completely disposable.

1a

<EP-A-820725 discloses a surgical instrument for performing anastomosis of tubular body tissues and comprises inner and outer members which move relative to each other to compress a clip by compressing a force on the clip in a direction parallel to the relative movement direction of the inner and outer members.

EP-A-916309 discloses with particular relevance to Figure 8A an applicator for a clip and compresses inner and outer members which can move relative to each other, the clip being positioned between jaw members attached to the inner and outer members and the clip being closed by relative movement the force applied to the clip being in parallel with the relative movement direction of the inner and outer members.

WO-A-9108708 discloses a suture tie device system which effects closure of a suture tie by relative movements between inner and outer members pressure being exerted on the suture tie in a direction parallel to the relative direction of movement of the members.>

03

The present invention therefore provides an applicator for surgical clips having upper and lower jaw members with co-operating locking means when in a closed position, said applicator comprising elongate tube means, said elongate tube means including means for attachment to an operating handle, said elongate tube means comprising an inner member and an outer member, said inner and outer members being slidable relative to each other, said inner member and said outer member being shaped to retain at least one surgical clip, said handle being operative to slide said inner member relative to said outer member, said inner and outer members having co-operating surfaces to cause said surgical clip to be forced from an open to a closed position on operation of said handle to slide said inner and outer members relative to each other said sliding motion creating a compressed force, orthogonal to said direction of sliding, between said outer member and said inner member sufficient to compress said upper jaw member and to cause said upper jaw member to lock into engagement with said lower jaw member.

Preferably, said outer member comprises an elongate tube shaped at an end distal from said handle to retain said surgical clip.

Preferably, said shape of said distal end of said outer member comprises an angled sloping platform on which said surgical clip rests, said sloping platform also comprising a raised flange forming stop means for said surgical clips.

Preferably, said inner member comprises an elongate inner member, said elongate inner member comprising means for storing said multiplicity of surgical clips.

Preferably, said application comprises means for indexing said multiplicity of surgical clips down said elongate inner member.

Said elongate inner member preferably includes stop means operable to
5 provide opposing mechanical forces to oppose the force on a surgical clip by said outer member to create closure of the clip.

The present invention also provides a magazine storage system for an applicator for surgical clips having upper and lower jaw members with co-
10 operating locking means when in a closed position, said magazine storage system comprising a plurality of surgical clips stored in a single column array within an elongate tube, said elongate tube comprising means at a proximal end thereof for attachment to a handle, said elongate tube means comprising an inner member and an outer member, said inner and outer
15 members being slideable relative to each other, said inner and outer members being shaped to retain said plurality of surgical clips and said inner and outer members having at a distal end thereof co-operating surfaces shaped to cause said surgical clip to be forced from an open to a closed position when said inner and outer members are moved relative to
20 each other said sliding motion creating a compressed force, orthogonal to said direction of sliding, between said outer member and said inner member sufficient to compress said upper jaw member and to cause said upper jaw member to lock into engagement with said lower jaw member.

25 Preferably the magazine includes spring means positioned within said inner member, said spring means being operative to urge said plurality of surgical clips from said proximal to said distal end of said elongate tube.

The outer member preferably comprises at the distal end a ledge shaped

stop means to arrest movement of said plurality of surgical clips, said ledge shaped stop means providing leverage to effect closure of said clip when said outer member is moved relative to said inner member.

- 5 Preferably a ratchet stop means is provided in said inner tube, said ratchet stop means being positioned between said spring means and said plurality of surgical clips. Said ratchet stop means being moveable by said spring means in a direction from said proximal to said distal end of said elongate tube, said ratchet stop means being co-operative with a corresponding

30. 07. 2001

(90)

CLAIMS

- Amended
1. An applicator for surgical clips having upper and lower jaw members with co-operating locking means when in a closed position, said applicator comprising elongate tube means (14), said elongate tube means including means for attachment to an operating handle (12), said elongate tube means comprising an inner member and an outer member, said inner and outer members (141, 143) being slidable relative to each other, said inner member and said outer member being shaped to retain at least one surgical clip (140), said handle being operative to slide said inner member relative to said outer member, said inner and outer members having co-operating surfaces (1406, 1402) to cause said surgical clip to be forced from an open to a closed position on operation of said handle to slide said inner and outer members relative to each other said sliding motion creating a compressed force, orthogonal to said direction of sliding, between said outer member and said inner member (1406, 1402) sufficient to compress said upper jaw member and to cause said upper jaw member to lock into engagement with said lower jaw member.
2. An applicator for surgical clips as claimed in Claim 1 in which said outer member comprises an elongate tube shaped at an end (1400) distal from said handle to retain said surgical clip.
3. An applicator for surgical clips as claimed in Claim 2 in which said shape of said distal end of said outer member comprises an angled sloping platform (1402) on which said surgical clip rests, said

sloping platform also comprising a raised flange forming stop means for said surgical clips.

4. An applicator for surgical clips as claimed in Claims 1 to 3 in which said inner member (143) comprises an elongate inner member, said elongate inner member comprising means for storing a multiplicity of surgical clips.
5. An applicator for surgical clips as claimed in any one of Claims 1 to 4 in which said application comprises means for inducing said multiplicity of surgical clips down said elongate inner member.
6. An applicator for surgical clips as claimed in Claim 5 in which said elongate inner member [~~preferably~~] includes stop means operable to provide opposing mechanical forces to oppose the force on a surgical clip by said outer member to create closure of the clip.
7. A magazine storage system for an applicator for surgical clips having upper and lower jaw members with co-operating locking means when in a closed position, said magazine storage system comprising a plurality of surgical clips (140) stored in a single column array within an elongate tube, said elongate tube comprising means (1410, 1411) at a proximal end thereof for attachment to a handle (12), said elongate tube means comprising an inner member (143) and an outer member (141), said inner and outer members being slideable relative to each other, said inner and outer members being shaped to retain said plurality of surgical clips and said inner and outer members having at a distal end thereof co-operating surfaces shaped to cause said surgical clip to be forced from an open to a closed position when said inner and outer

members are moved relative to each other said sliding motion creating a compressed force, orthogonal to said direction of sliding, between said outer member (1462) and said inner member (1406) sufficient to compress said upper jaw member and to cause said upper jaw member to lock into engagement with said lower jaw member.

5

8. A magazine storage system for an applicator as claimed in claim 7 including spring means positioned within said inner member, said spring means (142) being operative to urge said plurality of surgical clips from said proximal to said distal end of said elongate tube.

10

9. A magazine storage system for an applicator as claimed in claim 8 in which said outer member comprises at the distal end a ledge shaped stop means (1402) to arrest movement of said plurality of surgical clips, said ledge shaped stop means providing [leverage] end stop means to effect closure of said clip when said outer member is moved relative to said inner member.

15

20

10. A magazine storage system for an applicator for surgical clips as claimed in claim 9 in which a ratchet stop means (144) is provided in said inner tube (143), said ratchet stop means being positioned between said spring means and said plurality of surgical clips, said ratchet stop means being moveable by said spring means in a direction from said proximal to said distal end of said elongate tube, said ratchet stop means being co-operative with a corresponding ratchet means (146) on said inner member to be prevented from movement in the opposite direction.

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference FEMI/P23178PC	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 00/ 03115	International filing date (day/month/year) 11/08/2000	(Earliest) Priority Date (day/month/year) 14/08/1999
Applicant EMCARE (CYPRUS) LIMITED		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

2

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

GB 00/03115

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61B17/128

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 91 08708 A (YOON) 27 June 1991 (1991-06-27)	1, 2, 4-9, 11, 12
Y	page 26, paragraph 2 -page 31, paragraph 1; figures 21-24	10
X	DE 40 15 562 A (STORZ) 21 November 1991 (1991-11-21)	1, 4, 5, 7
Y	figures 1, 4, 5	10
X	EP 0 916 309 A (SCHILDER) 19 May 1999 (1999-05-19)	1-3
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Date of the actual completion of the international search

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